Exhibit D

NEWTON'S TELECOM DICTIONARY

11th Edition

The Official Dictionary of Telecommunications
Computer Telephony, Data Communications
Internet Telephony, Voice Processing
Windows 95 & NT Communications
LAN, WAN and Wireless Networking

by Harry Newton

#1 SELLER
140,000 SOLD

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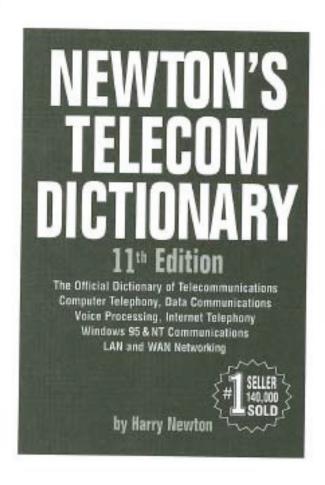
NEWTON'S TELECOM DICTIONARY

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red, green and blue (RGB). According to the tri-stimulus theory of color perception, all other colors can be adequately approximated by blending some mixture of these three lights together. This theory is harnessed in color television and video communications. It doesn't work so well in color printing where special colors are often printed separately.

ADDMD Administrative Directory Management Domain. A X.500 directory management domain run by a PTT (Posts, Telegraph, and Telephone administration) or other public network provider.

Address Characters identifying the recipient or originator of transmitted data. An address is the destination of a message sent through a communications system. A telephone number is considered the address of the called person. In computer terms, an address is a set of numbers that uniquely identifies something — a workstation on a LAN, a location in computer memory, a packet of data traveling through a network. IEEE 802.3 and 802.5 recommend having a unique address for each device worldwide. An address may also denote the position of data in computer memory or the data packet itself while in transit through a network.

Address Complete Message ACM. A CCS/SS7 signaling message that contains call-status information. This message is sent prior to the called customer going off-hook.

Address Field In data transmission, the sequence of bits immediately following the opening flag of a frame identifying the secondary station sending, or designated to receive, the frame.

Address Filtering A way of deciding which data packets are allowed through a device. The decision is based on the source and destination MAC (Media Access Control, the lower part of ISO layer two) addresses of the data packet.

Address Mask An electronic messaging term. A bit mask used to select bits from a network address (e.g. Internet) for subnet addressing. The mask is 32 bits long and selects the network portion of the address and one or more bits of the local portion. Sometimes called sub-net mask.

Address Prefix An ATM term. A string of 0 or more bits up to a maximum of 152 bits that is the lead portion of one or more ATM addresses.

Address Resolution 1. An internetworking term. A discovery process used when, as in LAN protocols such as TCP/IP and IBM NetBIOS, only the Network Layer address is known and the MAC address is needed to enable delivery to the correct device. The originating end station sends broadcast packets with the device's NLA to all nodes on the LAN; the end station with the specified NLA address responds with a unicast packet, addressed to the originating end station, and containing the MAC address. See ADDRESS RESOLUTION PROTOCOL.
2. An ATM term. Address Resolution is the procedure by which a client associates a LAN destination with the ATM address of another client or the BUS.

Address Resolution Protocol The Internet protocol used to map dynamic Internet addresses to physical (hardware) addresses on local area networks. Limited to networks that support hardware broadcasts.

Address Signaling Signals either the end user's telephone or the central office switching equipment that a call is coming in.

Address Signals Address signals provide information concerning the desired destination of the call. This is usually the dialed digits of the called telephone number or access codes. Typical types of address signals are DP (Dial Pulse), DTMF, and MF.

Address Space The amount of memory a PC can use directly is called its address space. MS-DOS can directly access 1024K of memory (one megabyte). A protected mode control program like Microsoft Windows 3.x or OS/2 can directly address up to 16 megabytes of memory. Here is a definition of address space, as supplied by the Personal Computer Memory Card International Association (PCMCIA) as address space applies to PCMCIA cards: "An address space is a collection of registers and storage locations contained on a PC Card which are distinguished from each other by the value of the Address Lines applied to the Card. There are three, separate, address spaces possible for a card. These are the Common Memory space, the Attribute Memory space and the I/O space."

Addressable Programming A cable TV (CATV) industry term. A subscriber orders a movie or sports event. He does that calling a phone number (generally an 800 number). A computer answers, grabs the calling number, confirms the request, then hangs up. The computer passes the request onto the cable company's computer, which checks the calling phone number against its accounting records. If the subscriber has good credit, the cable company sends a coded message down its cable network to the caller's set-top cable box/converter. The message temporarily enables that particular converter to descramble the channel offering the desired program.

Addressability 1. In computer graphics, the number of addressable points on a display surface or in storage.
2. In micrographics, the number of addressable points, within a specified film frame, written as follows: the number of addressable horizontal points by the number of addressable vertical points, for example, 3000 by 4000.
3. A cable TV term. The capability of controlling the operation of cable subscriber set-top converters by sending commands from a central computer. Such addressability is absolutely require for a cable system to offer pay-per-view services.

Addressable Point In computer graphics, any point of a device that can be addressed. See ADDRESSABILITY.

Addressee The intended recipient of a message.

Addressing Refers to the way that the operating system knows where to find a specific piece of information or software in the application memory. Every memory location has an address.

ADF Automatic Document Feeder

ADH Average Delay to Handle. Average time a caller to an automatic call distributor waits before being connected to an agent.

Adherence A term used in telephone call centers to connote whether the people working in the center are doing what they're meant to be doing. Are they at work? Are they on break? Are they answering the phone? Are they at lunch? All these activities are scheduled by workforce management software. If they're in line, the workers is "in adherence." If not, they're "out of adherence." See ADHERENCE MONITORING.

Adherence Monitoring Adherence monitoring means comparing real-time data coming out an ACD with forecast call volumes, forecast service levels and forecast workforce employment levels. The idea is to see if the people, the calls and the system are working as forecast. This a measure of how well your forecasting work. You need to know how well it works since it's

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next step was to permit the exchange of private mail messages called NetMail, between the sysops. The author found these capabilities so useful that they include them as part of the Fido BBS (Bulletin Board Software) package. It didn't take long for an informal network of Fido nodes to come into existence, all running the Fido software and exchanging various utility and program files and NetMail among sysops. Like other BBSs, the FidoNet BBSs had their own SIGs, or Special Interest Groups, where users with similar interests could exchange messages in a way similar to what on-line services call conferences or forums. By 1986 a Fido sysop had extended the NetMail concept to allow SIGs to share public messages among the BBSs, and EchoMail was born. In the years since, BBS authors and FidoNet users and sysops extended these capabilities to other BBS packages, and FidoNet grew. It currently has over 11,000 nodes covering most of the world. Many of the existing public and private networks go through FidoNet gateways into the Internet Mail system, which carries e-mail over a group of interconnected networks to universities, government agencies, military branches, and corporations. FidoNet technology uses store-and-forward messaging and is based on point-to-point communications between nodes.

Field 1. One half (every other line) of a complete television picture "frame", consisting of every other analog scan line. There are 60 fields per second in American television.

2. A place with no phones or other communications capability where an important person inevitably is when you need some vital information, service or device that only he or she can provide. "I'm sorry, the chief technician is in the field today, and can't be reached." Few "fields" are actually fields. They're usually downtown office buildings.

3. The specific location of data within a record. In the jargon of database management systems, many fields make up one record. Many records make up one file. A field is one of the basic subdivisions of a data record. The record on you in your company's database might include your name, your address, your salary, etc. A field is simply one of these — e.g. your salary, your last name, or your street address. All the records of all the employees in your company make up a file, also called a database.

4. The name given to that part of an electrical system in which electromagnetic lines of force are established.

5. In Windows, the field is the empty line in a dialog box where you enter data.

6. In call center jargon. A field is a single piece of data, such as an employee ID, stored in a record. The fields are organized under column headings.

Field Emission Displays FED. Another way of making thin, flat, lightweight computer displays for laptops, planes, etc. The other way is called "active matrix liquid crystal display." In field emission displays, a tiny color cathode ray tube sits behind each of the many pixels in the screen. This results in a brighter picture that uses less energy than the active matrix LCD displays. See also FED.

Field Intensity The irradiance of an electromagnetic beam under specified conditions. Usually specified in terms of power per unit area, e.g., watts per square meter, milliwatts per square centimeter.

Field Interlacing In television, field interlacing is the process of creating a complete video frame by dividing the picture into two halves with one containing the odd lines and the other containing the even lines. This is done to eliminate flicker.

Field Measurement Refers to both signal strength and qualitative field tests of wireless networks.

Field Programmable The ability of a system to have changes made in its program while it is installed — without having to be returned to the factory.

Field Repairable A characteristic of an unfortunately-decreasing number of electronic devices, that allows users or technicians to fix them where they are used ("in the field"), instead of having to send them to a centralized repair facility where esoteric parts and tools are available.

Field Rheostat A variable resistance used in the field circuit of a generator or motor to control the field current and consequently the strength of the electromagnetic field, thereby regulating the speed or power of the motor, or the output of the generator.

Field Sequential System Field sequential system was the first broadcast color television system, approved by the FCC in 1950. It was later changed to the NTSC standard for color broadcasting.

Field Strength The intensity of an electric, magnetic, or electromagnetic field at a given point. Normally used to refer to the rms value of the electric field, expressed in volts per meter, or of the magnetic field, expressed in amperes per meter.

Field Strength Meter Electronic instrument that measures the intensity of the magnetic field.

Field Upgradable A desirable characteristic of telecom equipment, computers, etc., that allows new features to be added and other improvements to be made, where the device is used, rather than having to return it to the manufacturer or a repair facility.

Field Wire A flexible insulated wire used in field telephone and telegraph systems. WD-1 and WF-16 are types of field wire. Usually contains a strength member.

FIFO First In, First Out. All telephone networks are a trade-off. It's simply too expensive to build a phone network which will be ready to give everyone dial tone and a circuit — if everyone picked up the phone simultaneously and tried to make a call. There are basically two ways of handling calls which cannot be sent on their way — i.e. for which there's no present available capacity. First, you can "block" the call. This means giving the caller a busy or a "nothing" (also called "high and dry"). Second, you can put the call into a queue. Now you have people waiting in queue, how do you handle them? The most equitable — the way most queues work — is to handle the calls on the basis of First In, First Out. (First call to come in is handled first.) There are other ways of handling calls in a queue — including First In, Last Out, by priority (e.g. which line you came in on and how much it cost, or how high you are in the corporation, etc.)

FIFO also is a term used in data communications. It is a buffering scheme in which the first byte of data that enters the buffer is also the first byte retrieved by the CPU. This scheme is used in the 16550 (the UART chip which controls the serial port on most PCs and most other serial-buffering designs, because it closely mimics the way serial data is actually transmitted; that is, one bit at a time.

Fifth Generation Fifth generation computers and telephone systems will be based on artificial intelligence. A fifth generation phone system may make far more sophisticated decisions about routing calls across networks. Those decisions may be

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ELEVENTH UPDATED AND EXPANDED EDITION

I wrote this book for all of us who are trying to keep up.

This is not a technical book. I explain technical concepts in non-technical terms. I figure anyone ought to be able to understand my definitions.

Some of my definitions are several pages long. They're mini-essays. They explain the term, its benefits and occasionally a checklist on buying and using the item. Sometimes I include warnings. I want my dictionary to make you informed, buyer or seller.

HARRY NEWTON

Harry Newton has 27 years in telecommunications. He is the telecom industry's most prolific writer. He is publisher of four monthly magazines — Computer Telephony, Teleconnect, Call Center and Imaging. He also founded LAN Magazine and Telecom Gear. He is promoter of the annual trade show, Computer Telephony Conference and Exposition. He holds an MBA from the Harvard Business School and an Economics undergraduate degree from the University of Sydney, Australia. He is not an engineer, but wishes he were. He is the telecom industry's most popular speaker. He has spoken before every telecommunications convention and trade show.

Real person is older, has much less hair and is uglier, too.

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